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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,373	04/12/2004	Yutaka Yamanaka	NEC WNZ-2664	2827
27667 7590 05/04/2007 HAYES, SOLOWAY P.C. 3450 E. SUNRISE DRIVE, SUITE 140 TUCSON, AZ 85718			EXAMINER SHEN, KEZHEN	
			ART UNIT 2609	PAPER NUMBER
			MAIL DATE 05/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/822,373	Applicant(s) YAMANAKA ET AL.	
	Examiner Kezhen Shen	Art Unit 2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 9-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Specification***

1. The disclosure is objected to because of the following informalities: (taken from US Pub 2004/0257955)

For example:

Section [0007], replace "in almost" to "in almost all";

Section [0009], "broken ling" should be "broken line". It is incumbent upon the applicant to review the entire specification to ensure that similar problems are corrected since only the exemplary are contemplated.

Appropriate correction is required.

### ***Claim Objections***

2. Claims 9 and 10 are objected to because of the following informalities: PRSNR is misspelled. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Blankenbeckler et al., US 2003/0161254 A1.

Regarding Claim 1 Blankenbeckler et al. teaches an optical disc medium (200 of FIG. 2) of a disc-shaped on which a spiral-shaped recording track is formed, said optical disc medium comprising a data recording area ([0034] writable portion, 204 of FIG. 2) and a system information recording area ([0034] mastered information or ROM portion, 202 of FIG. 2) which are set thereon with said optical disc medium divided in a radial direction thereof, wherein recording density of information on said system information recording area is lower than that of data on said data recording area ([0034] ROM portion has a lower data density than writable portion).

Regarding Claim 3, which further recites "the optical disc medium as claimed in claim 1, wherein said system information recording area has a shortest pit length which is substantially integer times as large as that of said data recording area as obvious due to fact the density of the data recording being higher than the system information recording area". Claim 3 is nothing more than stating the fact characteristic of a typical optical disc medium. Hence, the optical disc medium (200) of Blankenbeckler et al. inherently has the aspects as claimed.

Claims 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshida et al., US 2004/0196776 A1.

Regarding Claim 9 Yoshida et al. teaches an optical disc apparatus ([74] optical disk apparatus, 20 of FIG. 5) for recording or reproducing data in an optical disc

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medium (1 of FIG. 5) comprising a data recording area (Data Area of FIG. 15) and a system information recording area (System lead-in area of FIG. 15) which are set thereon with said optical disc medium divided in a radial direction thereof, recording density of information on said system information recording area being lower than that of data on said data recording area ([0266] the shortest pit and mark pitches are reduced to increase the recording density of the data area), wherein said optical disc apparatus comprises of a rotating means ([0074] spindle motor, 33 of FIG. 5) for rotating said optical disc medium, an optical head ([0074] optical head, 21 of FIG. 5) for carrying out reproduction of information from the rotating optical disc medium to produce a reproduced signal, a binary equalizing circuit ([0100] an equalizer, 64 of FIG. 7) for binary equalizing the reproduced signal when said optical head positions over said system information recording area and a partial-response maximum-likelihood (PRML) circuit ([0074] a PRML signal processing circuit, 24 of FIG. 7) for partial-response equalizing the reproduced signal when said optical head positions over said data recording area.

Regarding Claim 10 Yoshida et al. teaches the optical disc apparatus as claimed in claim 9, wherein said data recording area has a shortest pit length  $L1$  of data to be recorded or reproduced that satisfies a relationship of  $L1 < 0.35 \cdot \lambda / NA$ , where  $\lambda$  represents a wavelength of a light source for using recording/reproducing and  $NA$  represents a numerical aperture of an object lens, and said data recording area having a PSRSNR value defined by quality evaluation index in the PRML that is not less than fourteen (FIG. 16 shows the minimum mark length of

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both the data area and system lead-in area. Also the wavelength and numerical aperture are stated. If the values are used 0.35 times ( $405\text{nm}/0.65$ ) is around 218nm and the minimum mark length of the data area is 204nm which is less than the calculated 218nm); said system information recording area having a shortest pit length  $L_2$  of data to be exclusively reproduced that satisfies a relationship of  $L_2 > 0.50 \cdot \text{times} \cdot \lambda / \text{NA}$  (FIG. 16 shows the minimum mark length of both the data area and system lead-in area. Also the wavelength and numerical aperture are stated. If the values are used 0.50 times ( $405\text{nm}/0.65$ ) is around 311nm and the minimum mark length of the system lead-in area is 408nm which is more than the calculated 311nm); and said system information recording area having a track pitch which is wider than that of said data recording area (FIG. 16 shows track pitch of system lead-in area to be 0.68 micrometer and track pitch of the data area to be 0.40 micrometer).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenbeckler et al., US 2003/0161254 A1 as applied to claim 1 above and further in view of Yoshida et al., US 2004/0196776 A1.

Regarding Claim 5, Blankenbeckler et al teaches the optical disc medium as claimed in Claim 1, but fails to teach the further limitations of wherein said data recording area has a shortest pit length  $L1$  of data to be recorded or reproduced that satisfies a relationship of  $L1 < 0.35 \times \lambda / NA$ , where  $\lambda$  represents a wavelength of a light source for using recording/reproducing and  $NA$  represents a numerical aperture of an object lens, and said data recording area has a PSRSNR value defined by quality evaluation index in a partial-response maximum-likelihood (PRML) that is not less than fourteen; said system information recording area having a shortest pit length  $L2$  of data to be exclusively reproduced that satisfies a relationship of  $L2 > 0.50 \times \lambda / NA$ ; and said system information recording area having a track pitch which is wider than that of said data recording area.

However, Yoshida et al does. With regards to "wherein said data recording area has a shortest pit length  $L1$  of data to be recorded or reproduced that satisfies a relationship of  $L1 < 0.35 \times \lambda / NA$ , where  $\lambda$  represents a wavelength of a light source for using recording/reproducing and  $NA$  represents a numerical aperture of an object lens, and said data recording area has a PSRSNR value defined by quality

evaluation index in a partial-response maximum-likelihood (PRML) that is not less than fourteen", (FIG. 16 of Yoshida shows the minimum mark length of both the data area and system lead-in area. Also the wavelength and numerical aperture are stated. If the values are used 0.35 times ( $405\text{nm}/0.65$ ) is around 218nm and the minimum mark length of the data area is 204nm which is less than the calculated 218nm);

With regards to "said system information recording area having a shortest pit length L2 of data to be exclusively reproduced that satisfies a relationship of  $L2 > 0.50 \cdot \lambda / NA$ ", (FIG. 16 of Yoshida shows the minimum mark length of both the data area and system lead-in area. Also the wavelength and numerical aperture are stated. If the values are used 0.50 times ( $405\text{nm}/0.65$ ) is around 311nm and the minimum mark length of the system lead-in area is 408nm which is more than the calculated 311nm);

With regards to "said system information recording area having a track pitch which is wider than that of said data recording area", (FIG. 16 of Yoshida shows track pitch of system lead-in area to be 0.68 micrometer and track pitch of the data area to be 0.40 micrometer).

Therefore, the combined teaching of Blankenbeckler et al and Yoshida et al would have rendered obvious the limitations of claim 5. The motivation to incorporate the teaching of Yoshida into Blankenbeckler so that a signal having a high C/N ratio can be stably obtained (Yoshida, 0003).

Regarding Claim 7 Yoshia et al. teaches the optical disc medium as claimed in claim 5, wherein said system information recording area has a shortest pit length which



is substantially integer times as large as that of said data recording area (FIG. 16 the system lead-in area has a minimum mark length of 408nm and the data area has a minimum mark length of 204nm. The pit lengths are an integer times difference from each other.)

6. Claims 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenbeckler et al., US 2003/0161254 A1 in view of Yoshida et al., US 2004/0196776 A1 as applied to claim 5 above and further in view of Kawashima et al. US 2002/0006084 A1.

Regarding Claim 6, the combined teaching of Blankenbeckler et al. and Yoshida suggests that ROM portion and writable portion can exist in multiple areas on the same side of the disc (Blankenbeckler, fig. 2: 200, [0034]), but fails to further teach wherein said system information recording area lies in an inner peripheral side of said optical disc medium. However, Kawashima et al. teaches placing the system information recording area (Kawashima et al. [0053] read in area, 13 of FIG. 2A or 2B) in an inner peripheral side (Kawashima et al. [0053] innermost read-in area).

Therefore, taking the combined teaching of Blankenbeckler et al., Yoshida et al and Kawashima et al. as a whole, one of ordinary skill in the art would have been motivated to place the system information recording area taught by Blankenbeckler et al. in an inner peripheral side taught by Kawashima et al in order to increase the recording density and to expand the program data area to record more user data (Kawashima et al. [0055]).

Regarding Claim 8, the combined teaching of Blankenbeckler et al. and Yoshida et al fails to further teach wherein said system information recording area has specific recoding density and is set in particular radial positions of said optical disc medium, said optical disc medium being one of three types of an exclusively reproduction type, an additionally recordable type, and a rewritable type, specific information being recorded on said system information recording area, the specific information being information for specifying that said optical disc medium is one of said three types.

However, Kawashima et al. teaches a system information recording area to specific recoding density (Kawashima et al. [0068] the recording density of the disc) and information being recorded on said system information recording area (Kawashima et al. [0067] read-in area including special information), the specific information being information for specifying that said optical disc medium is one of three types of an exclusively reproduction type, an additionally recordable type, and a rewritable type (Kawashima et al. [0068] disc type inside the special information includes identification of CD-R or CD-RW).

Therefore, the combined teaching of Blankenbeckler et al, Yoshida et al and Kawashima et al as a whole would have motivated the placing of special information taught by Kawashima et al. into the mastered information of Blankenbeckler et al in order to provide vital information about the type of optical disc read.

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7. Claims 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenbeckler et al., US 2003/0161254 A1 in view of Kawashima et al. US 2002/0006084 A1.

Regarding Claim 2, Blankenbeckler et al. suggests that ROM portion and writable portion can exist in multiple areas on the same side of the disc (fig. 2: 200, [0034]), but fails to further teach the optical disc medium as claimed in Claim 1, wherein said system information recording area lies in an inner peripheral side of said optical disc medium.

However, Kawashima et al. teaches placing the system information recording area (Kawashima et al. [0053] read in area, 13 of FIG. 2A or 2B) in an inner peripheral side (Kawashima et al. [0053] innermost read-in area).

Therefore, taking the combined teaching of Blankenbeckler et al. and Kawashima et al. as a whole, one of ordinary skill in the art would have been motivated to place the system information recording area taught by Blankenbeckler et al. in an inner peripheral side taught by Kawashima et al in order to increase the recording density and to expand the program data area to record more user data (Kawashima et al. [0055]).

Regarding Claim 4, Blankenbeckler et al. fails to further teach the optical disc medium as claimed in Claim 1, wherein said system information recording area has specific recoding density and is set in particular radial positions of said optical disc medium, said optical disc medium being one of three types of an exclusively reproduction type, an additionally recordable type, and a rewritable type, specific information being recorded on said system information recording area, the specific

information being information for specifying that said optical disc medium is one of said three types.

However, Kawashima et al. teaches a system information recording area to specific recoding density (Kawashima et al. [0068] the recording density of the disc) and information being recorded on said system information recording area (Kawashima et al. [0067] read-in area including special information), the specific information being information for specifying that said optical disc medium is one of three types of an exclusively reproduction type, an additionally recordable type, and a rewritable type (Kawashima et al. [0068] disc type inside the special information includes identification of CD-R or CD-RW).

Therefore, the combined teaching of Blankenbeckler et al and Kawashima et al as a whole would have motivated the placing of special information taught by Kawashima et al. into the mastered information of Blankenbeckler et al in order to provide vital information about the type of optical disc read.

#### ***Examiner's Note***

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that

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would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kezhen Shen whose telephone number is (571) 270-1815. The examiner can normally be reached on Monday - Friday 7:30 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a


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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kezhen Shen

  
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SUPERVISORY PATENT EXAMINER